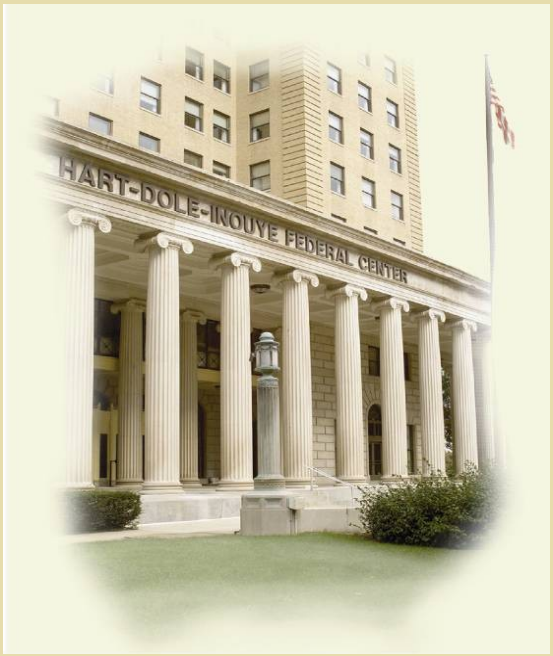
Data Quality



Defense Logistics Information Service

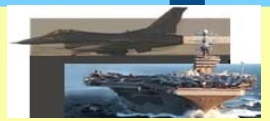
Data Integrity Branch

July 2007

DNA of the DOD Supply Chain

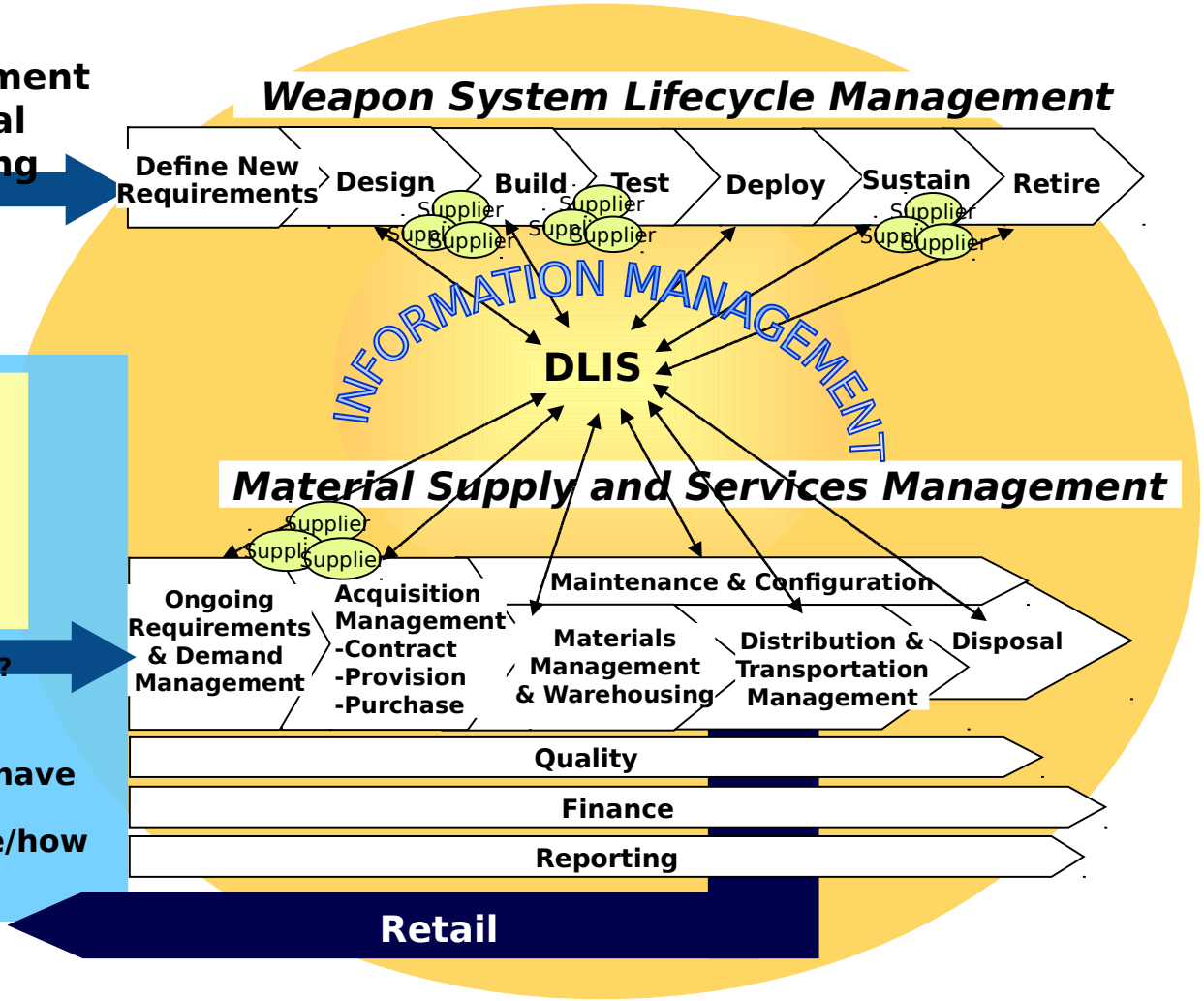
"Data is the DNA of supply chain management"

- **Acquisition**
- **Financial management**
- **Hazardous material**
- **Freight & packaging**
- **Maintenance**
- **Sustainability**
- **Disposal**
- **Demilitarization**

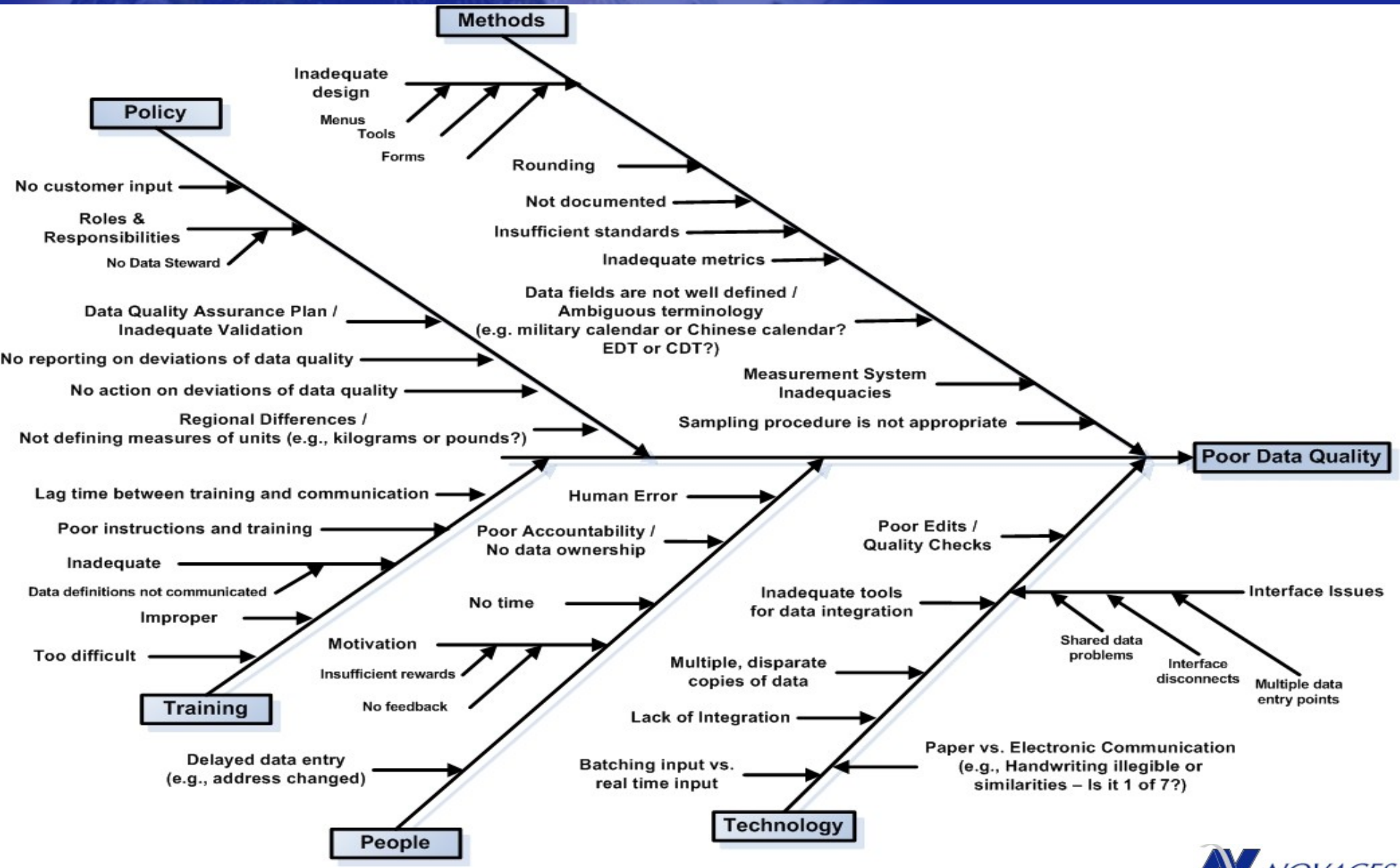


Who is the customer?
What is needed?
How many are needed?
Where is it needed?

- **What meets the requirement?**
- **How many do we have and where? or, Where/how can we obtain?**
- **How must it be handled?**



Root Causes of Data Quality



NOVACES
Advancing Process Improvement.

Costs and Benefits

- Geometric Cost Model for Bad Data
  - $1.00 to correct an error at data entry
  - $10.00 to correct a number of errors after the fact with batch processing
  - $100 cost of not correcting an error

- Benefits
  - Eliminates extra time to reconcile data
  - Alleviates customer dissatisfaction
  - Helps prevent loss of system credibility
  - Eliminates need for extra mailings to explain system downtime
  - Prevents some revenue loss
  - Assists with compliance issues

Master Data Management

BSM

ARMY

- Authoritative sources
- Data Standards
- Meta Data

NAVY

Air Force

…No New Stovepipes

Vendor Master

Data Input

> 500 BUSINESS RULES

> 500 EDITS

On-line D&B Parent Linkage

On-line DUNS Validation

3rd Party Data Validation/Certification

SBA

CAGE

USPS

Federal Reserve

DFAS NOC

Data Output

http://www

Public Web Search

Daily Extracts

XML Transactions

CCR Tools

ERP

DLA Business Systems Modernization, Army Logistics Modernization Program

NO ANNUAL UPDATE = INACTIVE

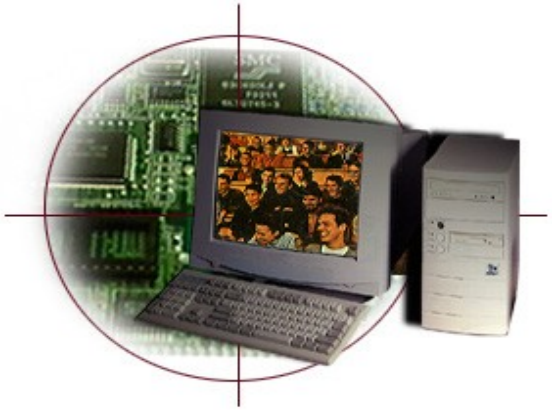
Customer Master

DOD Customer Master

DLA Customer Facing IT Systems

Catalog the custome

DLA Customer



Custome r Data Update

Custome r Account

Single Customer Master

DLA Employee

oDAAC Reengineering

Material Master

Data Input

Data Output

ERP

CD ROM

DLA Business Systems Modernization, Army Logistics Modernization Program

Public Web Search

DATA CLEANSING

14 Business Rules
DRN Reviews

DLIS Cataloging

ERP

Service Legacy Systems

453 MIOS/5,482 Combination edits

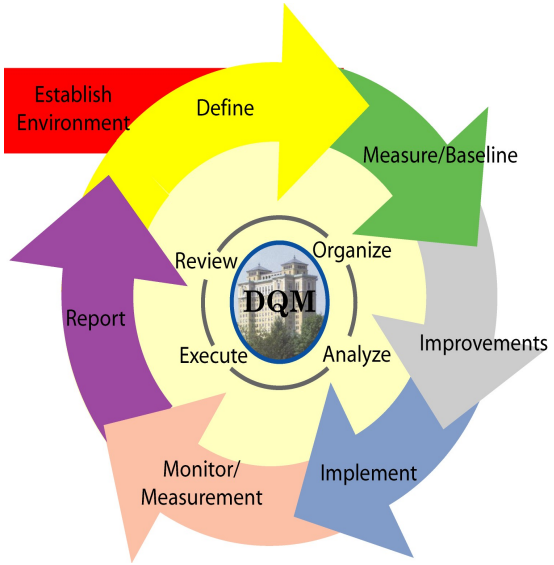
Service Legacy System

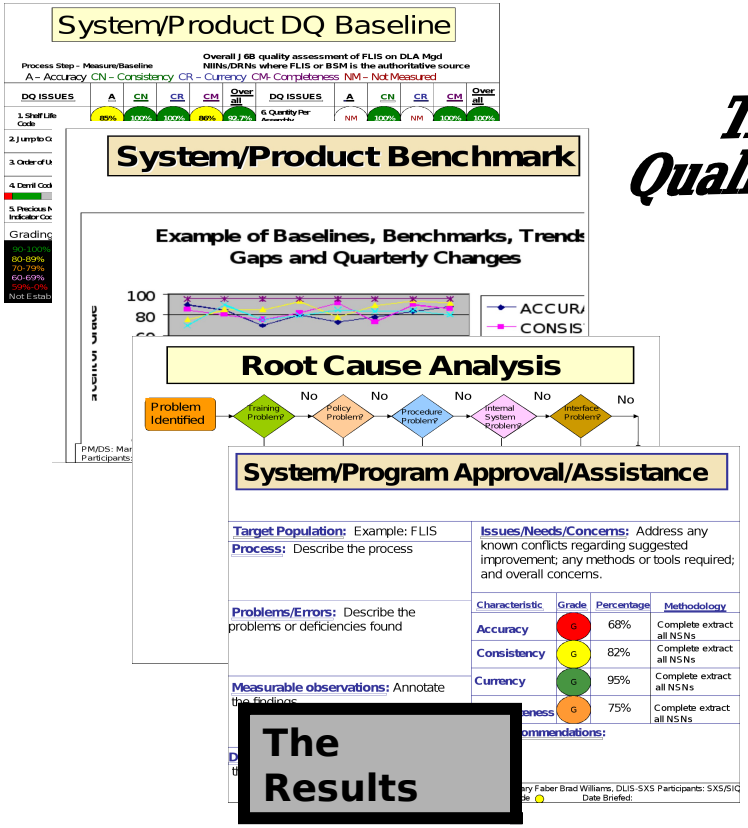
Cataloger Quality Check
DCMO GIRDER
Core Characteristics
Quality Scorecard

DLIS Data Quality Process

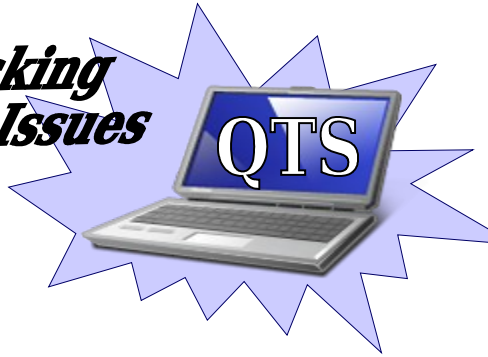
- **Knowledge exchanges with the experts – Universities, Gartner, others**
- **Plan addresses: People-Process-Technology**
  - **Management priority / visibility**
  - **Program managers: overall responsibility**
  - **Data stewards: analyze, measure, report and support PMs**
  - **Elaborate, fact-based methodology / measures**
  - **Edits, profiling tools and system checks**

Data Quality Methodology





Tracking Quality Issues



People
Process

Technology

Action Plans

Define
Measure
Improvements
Implement
Monitor
Report

The Results

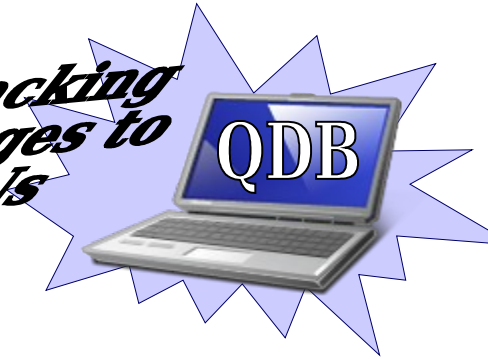
Accuracy

Consistency

Currency

Completeness

Tracking Changes to NSNs



Emerging Systems

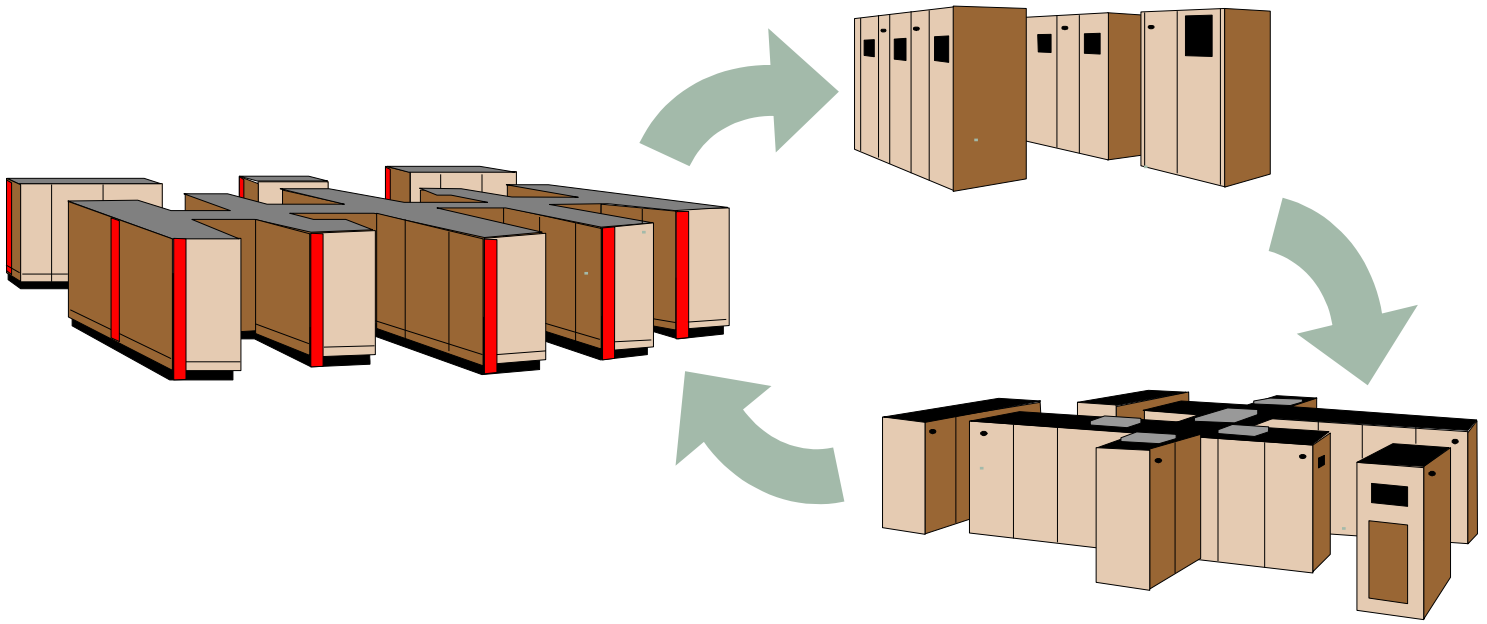
- Planning
  - Establish Data Cleansing Champion
  - Subject matter experts
- Business rule development
  - Review data
  - Authoritative data sources
  - Develop business rules
  - Establish frames
- Data Cleansing
- Reporting
  - Track progress
  - Auditing

Start Early!!!

Dedicate resources

Vision of the Future

- **To provide a means of maintaining master data throughout the life cycle of a product, independent of any particular application or computer system *(neutral exchange – long term retention)***
- **To improve the quality and availability of data through integration with manufacture and supplier systems**



Master Data Quality

- **Supplier and manufacturers recognize that:**
  - **Data integration is one of the keys to a long term relationship**
  - **The ability to provide their customers with quality data is a significant differentiating factor**
- **Supplier and manufactures are:**
  - **Publishing the specifications of their products, capabilities and services on their web sites**
  - **Looking to increase their visibility and understand that the best way to do this is to improve the quality of their data**
  - **Looking for a “Standard” that they can use to identify the quality of their data**

ISO 8000

- **Information quality — ISO 8000**
  - **Part 110: Master data quality: Syntax, semantic encoding, and conformance to customer requirements for the purpose of achieving data quality**
  - **Part 120: Master data quality: Provenance, requirements for the capture, exchange and model of provenar :he purpose of achievin**

International Organization for Standardization

Sample Contract for ISO 8000 Compliant Data

- **Cataloguing data is defined as the minimum number of characteristics required to uniquely identify an item of supply or supply concept**
- **The contractor, sub-contractor or supplier shall supply technical data for cataloguing purposes in electronic format on any of the items covered in this contract as follows: The data shall comply with applicable Federal ISO 22745-30 compliant Identification Guides**
  - **a. The data shall be encoded using concept identifiers from the ECCMA Open Technical Dictionary (eOTD), an ISO 22745 compliant open technical dictionary**
  - **b. The data shall be provided in eOTDr-XML, an ISO 22745-40 compliant Extensible Markup Language (XML) format published by ECCMA**
  - **c. The data shall be certified as ISO 8000-110 compliant**

Data Quality

- **Data Quality is not magic: It's the "new normal" and must be done DOD wide**
- **Functional "owners" have a key role: Data experts lead the quality effort**
- **Transformation programs: Need for quality permeates all DOD logistics data**
- **Built into each new s**
- **Participation**
- ***COURAGE***

Data Quality

Questions?